Adding a Dew Heater
to the Telrad Reflex Sight

The Telrad is a fantastic device to easily aim your scope. Its wide window and lack of magnification makes searching for your alignment stars effortless. Those with non GOTO mounts will also benefit from the Telrads ease of use for starhopping. There are several publications that show what you can “see” or fit into the 2 Telrad reticle circles helping in starhopping and searching for deep space objects. The device is inexpensive, light and a snap to use.

With all the Telrads advantages, it has one inherent disadvantage that all of us will encounter, that is dewing up of the objective glass. At the most inopportune times the glass will dew up rendering the sight almost useless. There are commercial devices that attach, Velcro or otherwise attach around the sight. While they do work, they are often cumbersome and add to the complexity of the device. They also do cost more than 50% of the entire cost of the Telrad itself.

This tutorial shows how to add a neat as a pin heater for the Telrad that is elegant, very inexpensive and a permanent fix. It works better than anything you can buy, AND….. it is REALLY, REALLY, easy! Here is what the entire circuit looks like:

Materials needed

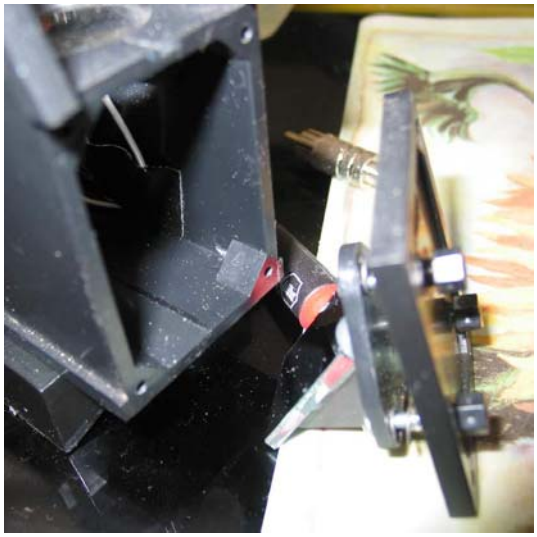
1) A Telrad Sight
2) A Dew Heater Controller (Kendrick, etc)
3) A bulkhead RCA female connector
4) A 2 watt 100 or 120 Ohm resistor (wire-wound preferred)
5) A small drill bit a little larger than the resistor leads (1/16 or so) and a drill bit the same size as the threads of the RCA connector (about ¼”)
6) 2 pieces of light gauge (22 AWG) wire about 6” long
7) A bit of Duct Tape (black is preferred)

Do NOT connect directly to the heater. Like any other dew heater, you MUST use a controller. Do NOT connect directly to 12V or you will have a meltdown.

To make the cable to connect your new heater to the controller, you can use a common RCA (male-to-male) cord like the kind you use to connect equipment to your stereo receiver. OR, if you prefer, you can make your own cable:

a. A piece of wire 2 conductor 18 or 20 gauge is lots (this connects the heater to your dew Heater Controller)
b. 2xMale RCA plugs or a pre made RCA male to male cable

Step 1.
Take your Telrad and remove the top sliding cover, and remove the 4 screws holding the mirror and alignment screw plate. Put the rear plate in a safe place away from your work surface.

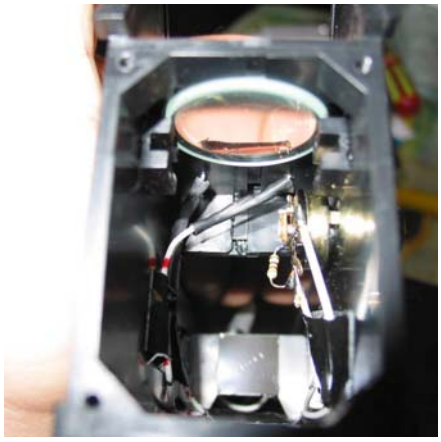


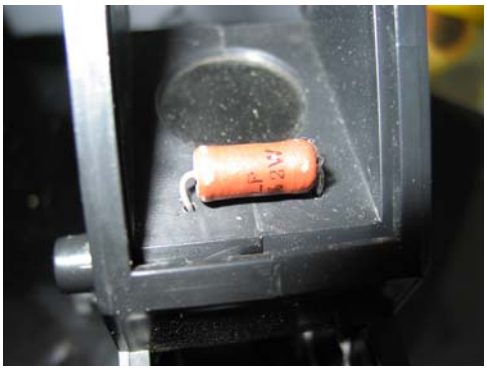
Step 2
Mark a spot on the sight where you will drill the hole for the RCA connector (refer to the picture), drill the hole and test fit the connector.

Step 3
Prepare the resistor by bending the leads close to the body of the resistor and trimming back the leads a little. Carefully solder the 2 wires to the leads. Solder one end of one of the leads to the ground ring of the Female RCA connector- (Heat shrink it if desired)

Step 4
Remove the glass by pulling it out of its guides (it is held in place with a few tacks of silicone)

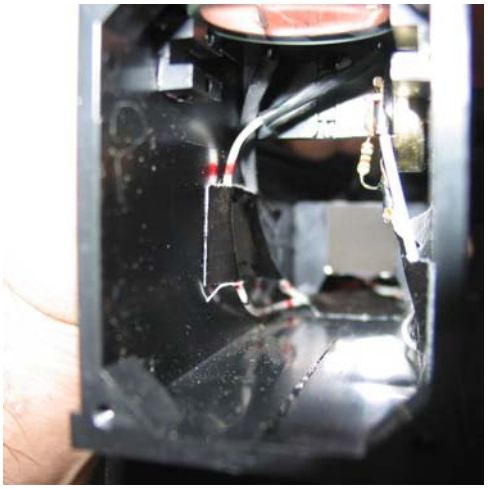
Step 5
The holes are located approximately ¼" from the front edge of the Telrad (see picture) The spacing of the holes will be to match your resistor and how the leads are bent, drill the 2 holes in the top of your Telrad and pass the wires and leads of your resistor through the holes.

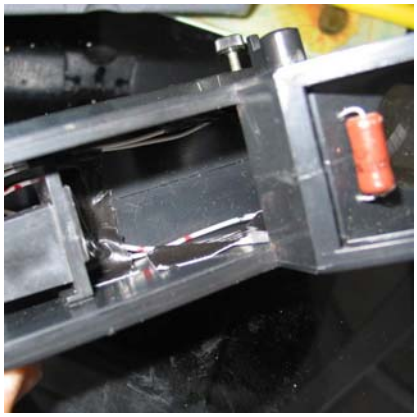




Step 6
Test fit the glass back in the holder and see if the resistor touches the glass- it should! If not bend the leads slightly so it puts a little tension on the resistor when you slide the glass back in. After the you finish this installation- Put a small tack of silicone on the glass to hold it in place and a small dab to hold the resistor in place if desired.

Step 7
Route the wires through the spaces in the Telrad bulkhead, use tape to secure the wires away from the LED optical path.





Step 8
Install the RCA bulkhead fitting into the hole and secure the Ground ring and nut to the fitting. Solder the other lead to the center lug of the RCA fitting- heat shrink if desired. Watch you don't touch the plastic of your sight with the soldering iron!!

Step 9 (optional)
Use a dab of hot melt glue to secure the resistor leads in place. Do this from the inside. Make sure to cover the round glass to avoid accidentally getting glue where it doesn't belong.

Step 10
Make sure to secure all the wires to the insides of the Telrad so they are clear of the optical path. A piece of Duct Tape (black preferred) does a good job of pinning the wires to the inside wall. Reinstall the back plate with the 4 screws and slide the top cover on.

Now what you have is a neat as a pin heater that will keep your Telrad dew free- simply use the RCA cable (made or purchased) and attach it to your dew heater controller. This heater will use about 100 milliamps. It has been tested in temps from -40c to plus 30c with no issues at all.

Total cost around $10 dollars or less.